

## Should we discontinue Pap smear screening in women aged >65 years?

### ■ EVIDENCE-BASED ANSWER

Women with a history of regular, normal Pap smear screening should discontinue screening by age 65 years (strength of recommendation [SOR]: **B**). Women without a history of serial normal Pap smears should continue screening (SOR: **B**).

### ■ EVIDENCE SUMMARY

There is little direct evidence to support discontinuation of Pap screening in older women, but indirect evidence demonstrates that screening has reduced value in women with a history of periodic, normal Pap screening.

A systematic review of 12 studies from 1995 to 2001, which included women aged 50 years and older stratified by age and outcomes, showed that the risk of high-grade cervical lesions falls with age, and that a history of normal Pap tests further reduces that risk.<sup>1</sup> This observational evidence is based on large population-based cohort studies and a few prospective cohort studies.

According to this review, fewer than 1 in 1000 (and possibly as few as 2 in 10,000) women aged >60 years with a history of a normal baseline Pap smear will develop cervical intraepithelial neoplasia (CIN) 3 or cancer. By comparison, women being screened for the first time had rates of CIN 3 or cancer at 2.3 per 1000 for ages 50 to 64 years, and 1.7 per 1000 for women aged 65 years.

A prospective study of older women (average age, 66.7 years) followed for 2 years after a normal Pap smear result found an incidence of Pap smear abnormalities of 110 per 4895 (23 per

1000 person-years; 95% confidence interval [CI], 18–27 per 1000), but only 1 result of the 110 was a true positive (0.2 per 1000 person-years).<sup>2</sup>

A retrospective review of 798 cases of CIN or worse diagnosed in Scotland from 1989 to 1990 found that 98% of CIN occurred in women aged ≤50 years.<sup>3</sup> Given a low prevalence of true positive high-grade Pap smears in elderly women with a history of normal Pap smear results, elderly women are disproportionately likely to have evaluations for false-positive results.<sup>1</sup> With an estimated sensitivity of 60% and specificity of 98%, continued Pap screening would result in at least 34 elderly women being evaluated for high-grade Pap smears for every 1 true positive; and for every 3 cases identified, 2 would be missed.<sup>1</sup> As a comparison, for women of all ages with a high-grade Pap smear, 70% to 75% will have CIN 2 or 3, and 1% to 2% will have invasive carcinoma.<sup>4</sup>

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## What are Clinical Inquiries?

**Clinical Inquiries answer real questions** that family physicians submit to the Family Practice Inquiries Network (FPIN), a national, not-for-profit consortium of family practice departments, residency programs, academic health sciences libraries, primary care practice-based research networks, and other specialists.

**Questions chosen** for Clinical Inquiries are those that family physicians vote as most important through a web-based voting system.

### Answers are developed by a specific method:

- FPIN medical librarians conduct systematic and standardized literature searches in collaboration with an FPIN clinician or clinicians.
- FPIN clinician authors select the research articles to include, critically appraise the research evidence, review the authoritative sources, and write the answers.
- Each Clinical Inquiry is reviewed by 4 or more peers and editors before publication in *JFP*.
- FPIN medical librarians coauthor Type I Clinical Inquiries that have required a systematic search.
- Finally, a practicing family physician writes an accompanying commentary.

Several studies support the conclusion that women aged >65 years without a history of regular normal Pap smear results continue to benefit from cervical cancer screening. A prospective study of an urban, low-income population in New York (average age, 74) who were previously inadequately screened ( $\geq 5$  years since last Pap smear in 75%) or had no previous screening (25%) found an incidence of 15.9 per 1000 of abnormal Pap smear results (95% CI, 8.5–23.3).<sup>5</sup>

The results of Pap screening among older women were analyzed in the retrospective review from the population-based registry of the Ontario Cervical Screening Program for almost 700,000 women screened during the first 6 months in 2000.<sup>6</sup> In this population, over 80% of women aged  $\geq 50$  years with high-grade lesion or carcinoma had a history of either no Pap screening or a previously abnormal test result in the past 4 years. Nonparticipants in Pap screening had a 2.7 to 4 times greater risk of cervical cancer than women screened at least once before.<sup>4</sup>

In the US, after Medicare began coverage for Pap smear screening in women age 65 and older, increased screening has resulted in more diagnoses of carcinoma in situ and a reduction in cervical cancer.<sup>7</sup>

A cost-benefit analysis, designed and published in 1992, evaluated Pap smear screening in the elderly with a Markov mathematical model. This model predicted the outcomes of periodic screening, diagnosis, and treatment for cervical cancer in hypothetical cohorts of women aged 65 to 109 years.<sup>8</sup> The **Table** depicts the cost per year of life saved for each Pap smear screening cohort of women analyzed in the Markov mathematical model. These data demonstrate

**A retrospective review found that 98% of CIN occurred in women aged 50 years or more**

cost-effectiveness of continued screening in elderly women who have not received adequate screening previously, while showing high cost-to-benefit ratio for continued screening in women with previous normal Pap smear results.

In a hypothetical cohort of elderly women who were never screened, annual Pap smear screening would cost less than \$6500 per year of life saved. The cost per year of life saved in women who have received regular screening every 3 years would be \$33,572.

#### ■ RECOMMENDATIONS FROM OTHERS

The 2002 guidelines from the American Cancer Society recommend that women aged 70 and older who have had 3 consecutive normal Pap smear results and no abnormal results in the past 10 years may choose to stop cervical cancer screening.<sup>9</sup> The 2003 guidelines from the US Preventive Services Task Force recommend discontinuing Pap smear screening after age 65 if previous Pap results were consistently normal.<sup>10</sup> In 1994, the Canadian Task Force on Preventive Health Care recommended stopping screening at age 70 if women have had at least 4 negative Pap smear results in the preceding 10 years and if previous results were normal.<sup>11</sup> The American College of Obstetrics and Gynecology recommends physicians determine when to stop screening on an individual basis, and notes that limited studies of older women made it difficult to set an upper age limit for Pap smears.<sup>12</sup>

Medicare covers Pap smears every 3 years, but will pay for yearly screening for women who have had an abnormal Pap result in the preceding 3 years and for women at high risk of cervical or vaginal cancer.

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TABLE

### Cost-benefit analysis of Pap smear screening

Patient	Screening frequency	Cost per year of life saved
All women aged $\geq 65$ years	Every 3 years	\$7000
Women aged $\geq 65$ years without a previous Pap or Pap within 5 years	Every year	<\$6500
Women aged $\geq 65$ years with a history of normal, regular Pap smear results	Every 3 years	\$33,572

#### ■ CLINICAL COMMENTARY

##### Stop Pap smears at 65 for those with normal prior screening, low risk for HPV

My older patients are delighted to stop having Pap smears and want to quit as soon as possible. The test can become quite an ordeal with advancing age as cervical stenosis, vaginal atrophy, and hip arthritis increase patient discomfort and technical difficulty. Following the lead of the US Preventive Services Task Force, I stop recommending them at age 65 for most patients who have a record of recent normal Pap smear results.

However, older adults are sexual beings, and HPV transmission can occur among those who are sexually active outside a long-term mutually monogamous relationship. When counseling women with high-risk lifestyles, I will discuss the possibility of continuing regular Pap smears beyond 65 years of age.

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